In The Claims:

1.   (currently amended)   A method of adaptively controlling the speed of a reference vehicle having a controller comprising:

detecting a target vehicle;

setting a reference vehicle headway distance indicative of a desired separation between said reference vehicle and said target vehicle;

receiving at said reference vehicle, <u>by way of an inter-vehicle communication network,</u> target vehicle data <u>communicated</u> from said target vehicle; and

modifying said reference vehicle headway distance as a function of said target vehicle data.

2.   (original)   A method according to claim 1 wherein said target vehicle data includes a braking capability value (BC_T) for said target vehicle, and wherein the step of modifying includes modifying said reference vehicle headway distance as a function of said BC_T.

3.   (original)   A method according to claim 1 wherein said target vehicle data includes data comprising at least one of: a tire pressure value; a tire size value; a tread wear value; a tire temperature value; a vehicle weight value; target vehicle speed; or a road condition value.

4.   (original)   A method according to claim 2 wherein modifying said reference vehicle headway distance includes increasing said reference vehicle headway distance if said BC_T indicates less than an optimum braking capability.

5.   (original)   A method according to claim 1 wherein said target vehicle data includes a target vehicle operator attention value indicative of a level of potential target vehicle operator distraction.

6.   (original)   A method according to claim 1 comprising:

determining a braking capability value (BC_R) for said reference vehicle, and wherein said step of modifying includes modifying said reference vehicle headway distance as a function of said BC_T and said BC_R.

7.   (original)   A method according to claim 6 wherein determining said BC_R comprises analyzing reference vehicle data comprising at least one of: a tire pressure value; a tire size value; a tread wear value; a tire temperature value; a vehicle weight value; reference vehicle speed; or a road condition value.

8.   (original)   A method according to claim 6 wherein modifying said reference vehicle headway distance includes increasing said reference vehicle headway distance if said BC_R indicates less than an optimum braking capability.

9.   (original)   A method according to claim 7 wherein said reference vehicle data includes a reference vehicle operator attention value indicative of a level of potential reference vehicle operator distraction.

10.   (currently amended)   A method of adaptively controlling the speed of a reference vehicle having a controller comprising:

detecting a target vehicle;

setting a reference vehicle headway distance indicative of a desired separation between said reference vehicle and said target vehicle;

receiving at said reference vehicle, a braking capability value (BC_T) for said target vehicle, by way of an inter-vehicle communication network;

generating a braking capability value (BC_R) for said reference vehicle; and

modifying said reference vehicle headway distance as a function of said BC_T and said BC_R.

11.   (original)   A method according to claim 10 wherein determining said BC_R comprises analyzing reference vehicle data comprising at least one of: a tire

pressure value; a tire size value; a tread wear value; a tire temperature value; a vehicle weight value; reference vehicle speed; or a road condition value.

12. (original) A method according to claim 11 wherein said BC_T is generated at said target vehicle as a function of target vehicle data comprising at least one of: a tire pressure value; a tire size value; a tread wear value; a tire temperature value; a vehicle weight value; reference vehicle speed; or a road condition value.

13. (original) A method according to claim 10 wherein said BC_T includes a target vehicle operator attention value indicative of a level of potential target vehicle operator distraction.

14. (original) A method according to claim 10 wherein said BC_R includes a target vehicle operator attention value indicative of a level of potential target vehicle operator distraction.

15. (original) A method according to claim 10 wherein modifying includes increasing said reference vehicle headway distance if said BC_R indicates less than an optimum braking capability.

16. (original) A method according to claim 10 wherein modifying includes decreasing said reference vehicle headway distance if said BC_T indicates less than an optimum braking capability.

17. (currently amended) An adaptive cruise control system for a reference vehicle comprising:

a memory for storing reference vehicle data;

a detection system for detecting a target vehicle;

a receiver receiving target vehicle data from said detected target vehicle by way of an inter-vehicle communication network; and

a controller coupled to said memory for adaptively controlling a, speed of said reference vehicle to maintain a reference vehicle headway distance indicative of a desired separation between said reference vehicle and said target vehicle, wherein said

reference vehicle headway distance is generated as a function of said reference vehicle data and said target vehicle data.

18. (original) A system according to claim 17 wherein said reference vehicle data includes a braking capability value (BC_R) for said reference vehicle.

19. (original) A system according to claim 18 wherein said target vehicle data includes a braking capability value (BC_T) for said target vehicle.

20. (original) A system according to claim 17 wherein said reference vehicle data includes data comprising at least one of: a tire pressure value; a tire size value; a tread wear value; a tire temperature value; a vehicle weight value; target vehicle speed; or a road condition value.